4472

MULTIPLE ECOSYSTEM SERVICES IN THE UPLANDS OF VIETNAM: RICE OR FORESTS VS. RICE AND FORESTS

Jourdain, Damien[1]; Dinh, Quang D.[2]

[1] International Rice Research Institute/CIRAD, Hanoi, VNM; [2]NOMAFSI, Phu To, VNM

Uplands of Vietnam provide important ecosystem services (ES): food production for the mainly poor and marginalized populations, biodiversity reservoir, and watershed-regulating functions. However, as population increases, finding land uses that alleviate poverty, increase food production, and maintain other ES over time poses real challenges. In the early 2000's, agricultural and forest conservation policies were introduced that triggered the development of irrigated rice. But most bottom valleys will not be large enough to sustain food needs, and the competition between food production and other ES will remain problematic. Besides, requiring farmers to limit their agricultural production in favor of other ES is unlikely to occur unless alternative remunerating activities are proposed to sustain their livelihoods. New varieties and natural resource management technologies have the potential to produce high rice yields even in rainfed conditions, allowing the production one additional rice crop per year. Once food production goals are met on a smaller area, farmers may develop other activities on the sloping areas such as forest re-growth or cultivating permanent crops. As such, the new technologies could contribute indirectly to the success of forest protection/rehabilitation projects. We developed a framework that accounted for agriculture-forestry-environment interactions and analyzed the trade-offs faced by typical farmers. Basic simulation runs with realistic expert data allowed us to discuss the effects of new technologies on these trade-offs. We argued that focusing on forestry alone for preserving watershed ES is likely to be less efficient and equitable than a double-pronged approach of promoting food production intensification and forestry projects.